

# ***Striving to achieve resilience across social, environmental, and technical systems***

*Research and analyses at Oak Ridge National Laboratory*

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***Abstract***— Sustainability and resilience necessarily involve interacting social, economic, environmental, and technological systems. It seems obvious that sustainability and resilience cannot be analyzed fully without considering the intersections among these systems. Likewise, it seems obvious that interventions intended to enhance sustainability and resilience must be designed, implemented, and assessed within the complex, evolving contexts created by these interacting systems. These obvious points too often are overlooked by well-intentioned, but overly narrow approaches to sustainability and resilience. That is why our group at Oak Ridge National Laboratory analyzes intersections across and among social, economic, environmental, and technological systems. Additionally, data and methods for analyzing cross-system contexts and impacts meaningfully and accurately may be lacking. Therefore, our group also strives to develop and improve the science of sustainability and resilience. This presentation provides an overview and illustrative examples of our research and analyses intended to help assure that science, technologies, and policies are effective in achieving their societal objectives.

***Keywords***—social, economic, and technological systems; sustainability; resilience; Oak Ridge National Laboratory